

In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1-24. (Canceled).

25. (Original) A whole chip electrostatic discharge ECD method comprising the steps of :
connecting all input/output, I/O pads to each other with double isolation; and
inserting a circuit of the first embodiment of this invention between each adjacent I/O pair on a semiconductor chip.

26. (Original) The whole chip ECD method of claim 25 further comprising the steps of:
including a PN diode whose p-side connects to the input/output, I/O pad to be protected and whose N-side is connected to Vcc supply voltage;
including a PMOS FET plus NMOS FET 2-device input stage connected between Vcc and Vss;
including a resistor plus NMOS FET first mid stage connected between Vcc and Vss (ground);
including a resistor to ground second mid-stage; and
including a PMOS FET plus NMOS FET output stage connected between Vec and Vss (ground)
whose input connects from the mid-stages and whose output drives an unused I/O pad.

27. (Original) A whole chip electrostatic discharge ECD method comprising the steps of
connecting all input/output, I/O pads to each other with double isolation, and
inserting a circuit of the second embodiment of this invention between each adjacent I/O pair on a semiconductor chip.

28. (Original) The whole chip ECD method of claim 27 further comprising the steps of
including a PN diode whose p-side connects to the input/output,

I/O pad to be protected and whose N-side is connected to Vcc supply voltage,
including a PMOS FET plus NMOS FET 2-device input stage connected between Vcc and Vss,
including a resistor plus NMOS FET first mid stage connected
between Vcc and Vss (ground),
including an NMOS FET in a second mid-stage connecting both the input stage and the output stage,
and
including a PMOS FET plus NMOS FET output stage connected between Vcc and Vss (ground)
whose input connects from the mid stages and whose output drives an unused I/O pad.